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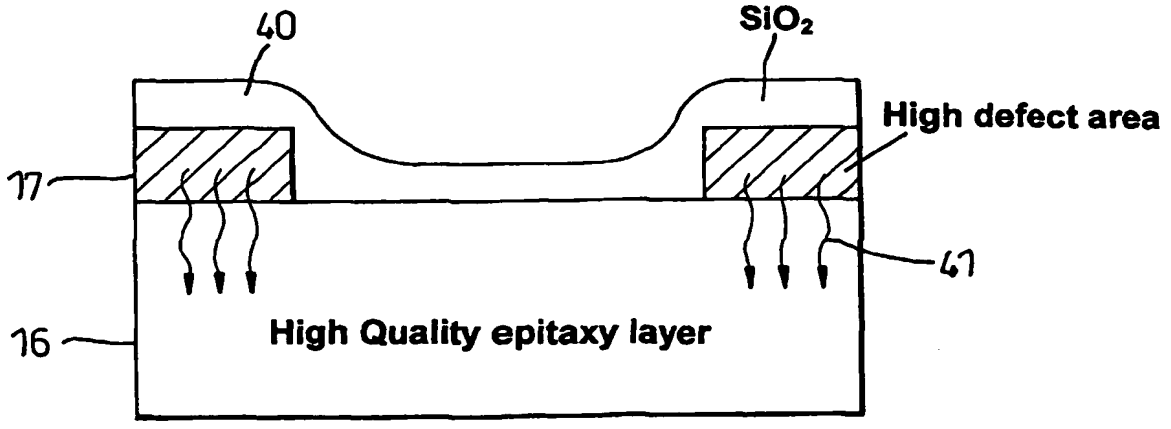
(54) Title: QUANTUM WELL INTERMIXING IN SEMICONDUCTOR PHOTONIC DEVICES



(57) Abstract: A method for fabricating a semiconductor device in a semiconductor structure, provides enhanced quantum well intermixing in desired regions of the device by forming a first, relatively high quality, epitaxial layer on a substrate, the high quality layer including a quantum well; forming a second, relatively lower quality, epitaxial defect layer on top of the high quality layer; and thermally processing the structure to effect at least partial diffusion of the defects from the defect layer into the high quality layer in order to achieve quantum well intermixing in the structure. The use of an epitaxially grown defect layer on top of, or within, a high quality epitaxially grown device body enables quantum well intermixing techniques to be performed at lower temperatures and thereby improves device characteristics.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01S5/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01L H01S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/127752 A1 (LEE ALEX S W ET AL) 12 September 2002 (2002-09-12) paragraphs '0006!, '0008!, '0019! - '0022!, '0033!	1-3,7,8, 13,21-25
X	LEE A S W ET AL: "Enhanced band-gap blueshift due to group V intermixing in InGaAsP multiple quantum well laser structures induced by low temperature grown InP" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 78, no. 21, 21 May 2001 (2001-05-21), pages 3199-3201, XP012028077 ISSN: 0003-6951 the whole document	1,8, 21-25

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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